

NORMAL-FLOW HEAT EXCHANGER

Abstract

A normal-flow heat exchanger (NFHX) (120) utilizing a working fluid and having a high heat flux transfer capacity. The NFHX comprises a core (130) having a heat-transfer surface (128), a length and a width. An inlet plenum (124) is located at one end of the length, and an outlet plenum (126) is located at the opposite end of the length. A plurality of inlet manifolds (140) extend the length of the core, and a plurality of outlet manifolds (142) extend the length of the core and are located alternatingly with the inlet manifolds across the width of the core. A plurality of interconnecting channels (144) each fluidly communicate with a corresponding inlet manifold and the two outlet manifolds located immediately adjacent that inlet manifold. A heat-exchanger fin (154) is generally located between each pair of immediately adjacent interconnecting channels. In one embodiment, the core comprises a plurality of plate pairs (132) each comprising a heat exchanger plate (136) and a spacer plate (138).

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